

Miami-Dade County Water & Sewer Department Consumptive Use Permit Renewal and Modification



Chip Merriam
November 15, 2007
Governing Board Meeting

Background

- **Previous Miami-Dade Water & Sewer Department (MDWASD) permits authorized up to 413 million gallons per day (MGD) from Biscayne Aquifer**
 - **Permits last issued during 1990's**
 - **Withdrawals heavily dependent upon recharge from Everglades**
 - **Minimal reuse of wastewater -- approximately 300 MGD disposed of in ocean or deep wells**
 - **Minimal use of other alternative sources**
 - **Actual use significantly less than the previous permit allocation**

Significant Events

- 1997 – Laws passed requiring minimum flows and levels (MFL), regional water supply planning
- 2000 – Approved Lower East Coast Regional Water Supply Plan
- 2000 – Comprehensive Everglades Restoration Plan (CERP)
- 2001 - Adopted Everglades MFL & recovery strategy
- 2001 – MDWASD applied to renew Central Wellfield System permit
- 2003 – Adopted “B” List Rules
- 2004 - MDWASD applied to consolidate permits for 20 year duration

Significant Events

- **2005 - Senate Bills 360 & 444**

- **Future sources made available concurrent with growth**
- **Develop alternative supplies to limit resource impacts**
- **Review Local Government Comprehensive Plan for consistency with water use permits & water supply plans**

- 2006 - Executed Interim Use Agreement between Miami-Dade County and SFWMD**

- **Identified specific tasks and deadlines to complete 20 year permit application**
- **Required evaluation of alternative supplies**

- **2007 - Adopted Regional Water Availability Rule**

Summary of the Permit Application

- Request for 20 Year Permit; 418.5 mgd by 2027
- Projected 2027 Population: 2,731,000
- Per Capita Use Rate: Declines from 155 to 148 gallons per day over 20 years
- Sources:
 - Biscayne Aquifer:
 - 347 MGD base condition water use
 - 42 MGD increase with reclaimed water offsets
 - Alternative Water Supply Sources
 - 29.4 MGD Floridan aquifer - blending and reverse osmosis
 - 170 MGD Reclaimed wastewater

Subareas

- Hialeah / Preston
- Alexander Orr
- South Dade

sfwmd.gov

Project Evaluation

- **Calibrated surface/ground water models used**
- **Evaluated Everglades impacts of “base condition water use”**
- **Evaluated impacts of requested increases necessary to meet projected growth**
- **Evaluated implementation of alternative water supply projects & offsets in five year increments over 20 years**

Key Elements of Proposed Permit

Compliance with Regional Water Availability Rule:

- **Limit Everglades water supply impacts to that existing prior to April 2006 (base condition water use) – 347 MGD**
- **Require use of 55.6 MGD reclaimed water to offset increased demands from the Biscayne Aquifer:**
 - **South District Wellfield Recharge**
 - **West District Wellfield Recharge**
- **29.4 MGD Floridan Aquifer Blending & Reverse Osmosis**

Key Elements of Proposed Permit

Require reuse of reclaimed water to ensure use is consistent with the public interest and is a “reasonable-beneficial use” (s. 373.223, F.S.)

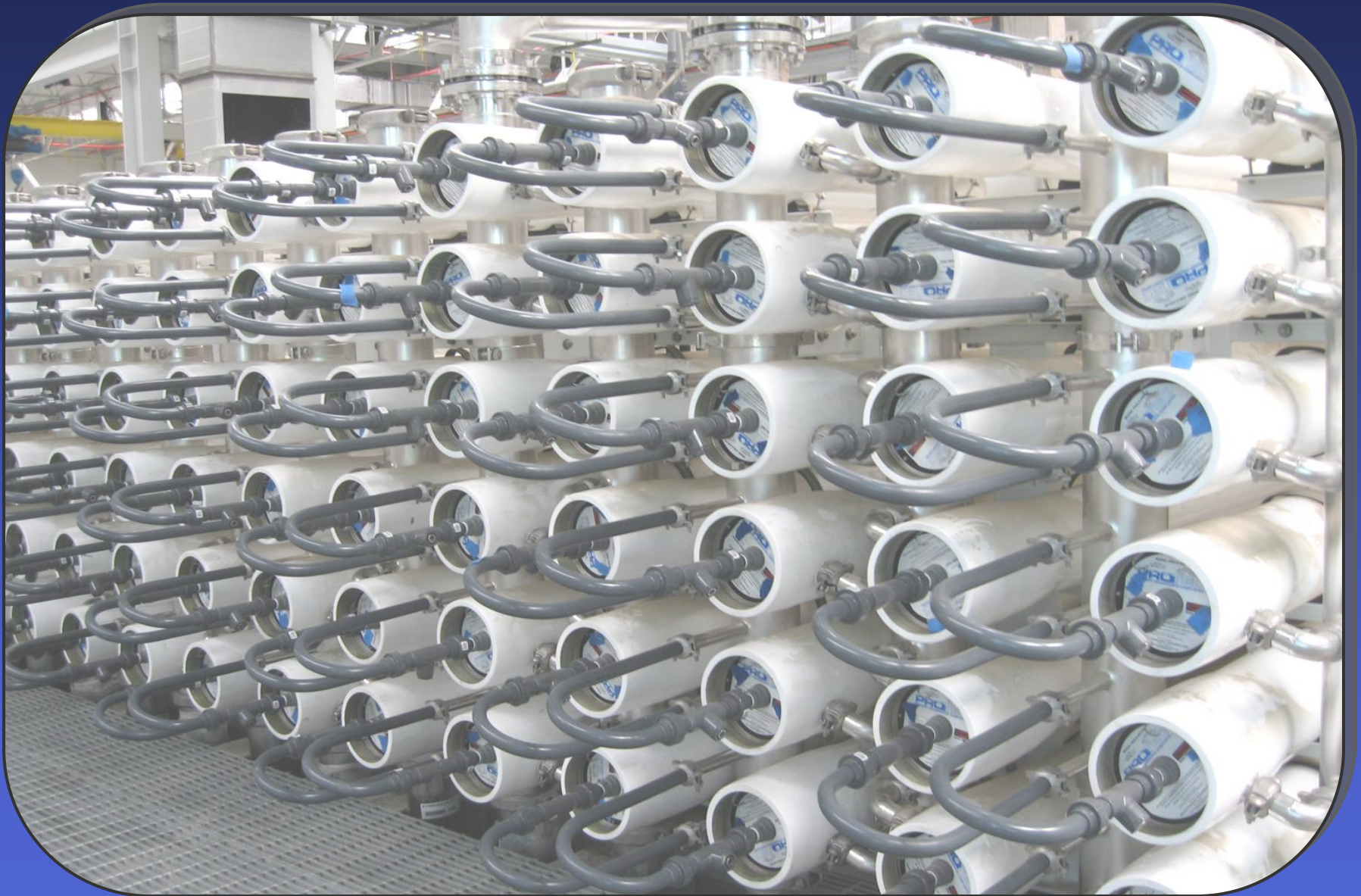
- **Use water more than once**
- **Reduce dependence on sources dependent on Everglades recharge**
- **Reduce ocean outfalls and deep well injection**
- **Reuse water to prevent competition with natural systems supplies**
- **Implement Everglades restoration, including the Comprehensive Restoration Plan (CERP)**

Key Elements of Proposed Permit

Specific Reuse Projects Totaling 170 MGD:

- **Biscayne Bay Rehydration Project**
- **Urban irrigation reuse**
- **Groundwater/wellfield recharge**
- **Additional Potential Reuse Projects**
 - **FPL/Miami Dade to work on feasibility for projects, including:**
 - **70 MGD for New Turkey Point Nuclear Power Plant**
 - **14 MGD for expansion of gas powered plant**

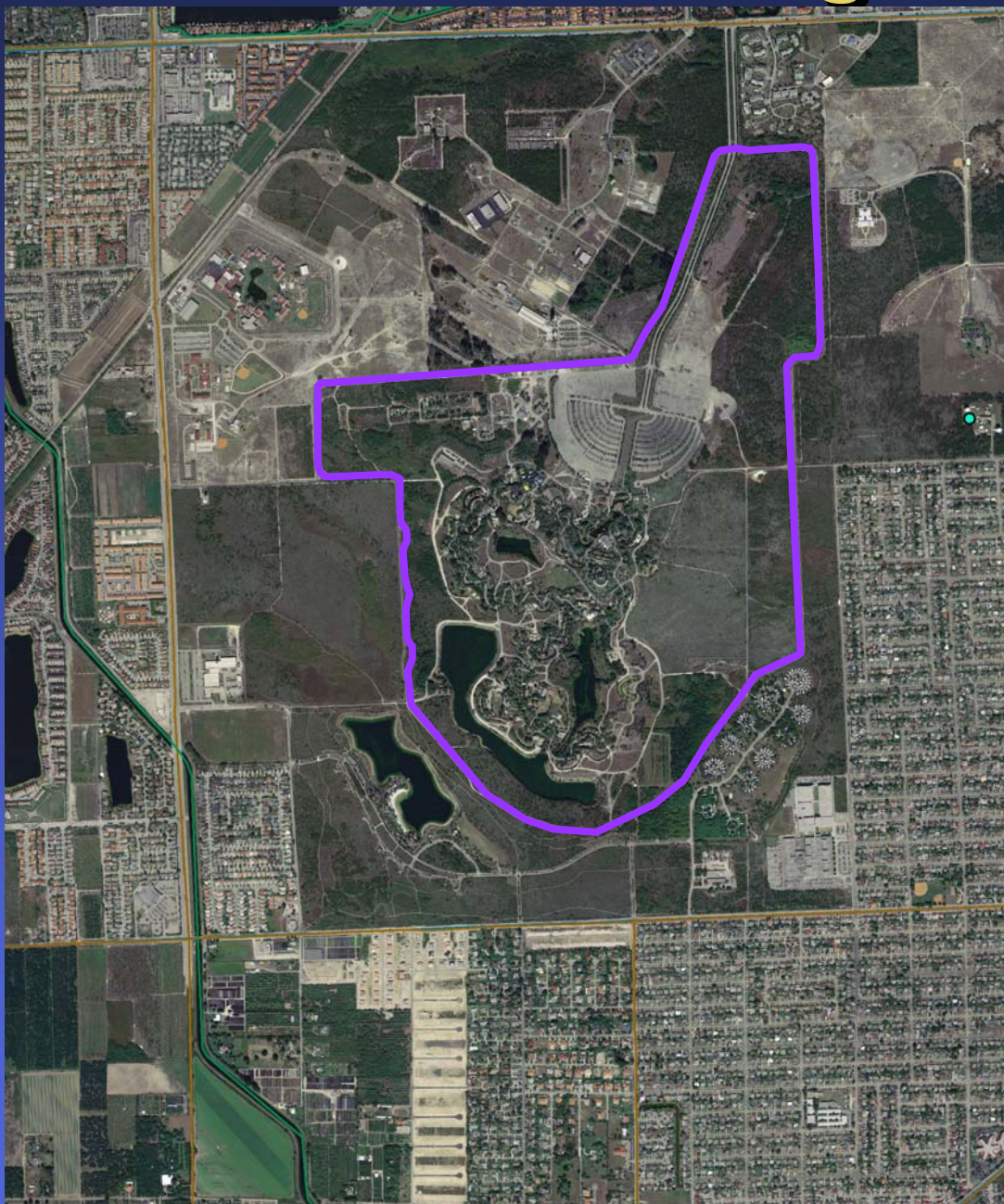
Reverse Osmosis



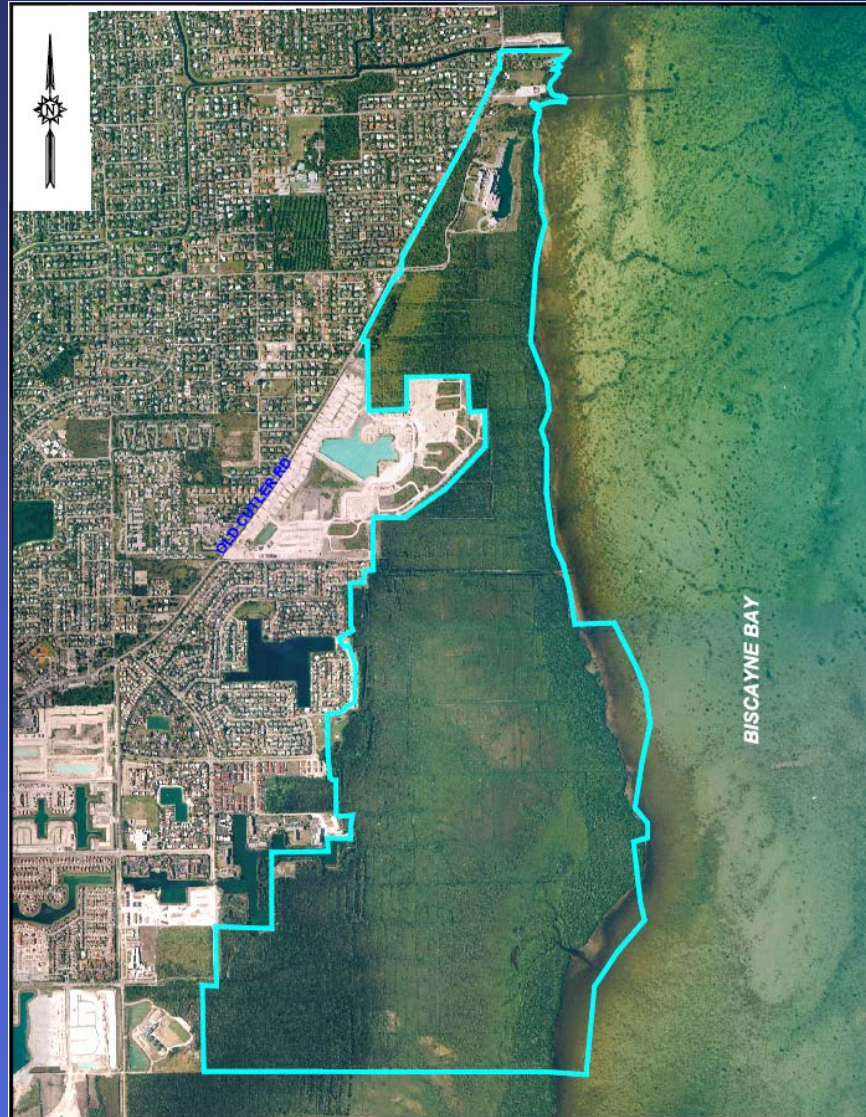
Purple Pipe Projects



Groundwater Recharge Site



Biscayne Bay Coastal Wetland Rehydration



Key Alternative Water Projects:

Project		Quantity	In Service
1.	Hialeah Reverse Osmosis (Floridan Aquifer)	10.0 MGD 5.0 MGD 2.5 MGD	2011 2017 2027
2.	Purple Pipe Projects (North & Central)	8 MGD	2012
3.	South Dade Groundwater Recharge	18.6 MGD	2014
4.	Biscayne Coastal Wetlands	75.7 MGD	2021
5.	Snapper Creek wellfield recharge (from new West WWTP)	21 MGD	2021
6.	Snapper Creek wellfield recharge (from new West WWTP)	16 MGD	2026
7.	Purple Pipe Projects (Western growth area)	6.5 MGD	2021
8.	Floridan Aquifer Blending	12 MGD	2009
	Additional potential reuse projects (FPL)	84 MGD	2018
	Maximum total alternative/reuse projects	283.4 MGD	2027

Limiting Conditions

- **Implement Alternative Water Supply Plan:**
 - **Specific timelines for design, permitting and construction of each alternative water supply project**
 - **Ensure compliance with “base condition water use” and phased implementation of alternative water supplies**
 - **Recharge must be in place before increased pumping from Biscayne Aquifer**
- **Requires maximum use of alternative sources (“first on – last off” operation)**
- **Implement Water Conservation Plan/Unaccounted for Water Losses**
 - **Reduces demands by 19.6 MGD over 20 years**

Limiting Conditions (cont.)

- **Implement Wellfield Operational Plan**
 - **Comply with base condition water use allocation**
 - **Increase pumpage only when corresponding alternative source or offset made available**
- **Submit 5-year compliance reports to continue to provide reasonable assurances over 20 year duration**
- **Advises that District will utilize all available compliance & enforcement remedies, including comprehensive plan review authority with Department of Community Affairs**

Addendum to the Staff Report

Addendum dated November 14, 2007

- **Clarifies & corrects existing limiting conditions for internal consistency**
- **Revises identified reporting dates for wellfield recharge & Biscayne Bay Coastal Wetlands Rehydration project feasibility evaluations**

Staff Recommendation

- 1. Approve Water Use Permit Application 040511-5 (renewal & modification of Permit No. 13-00017) for Miami-Dade Water & Sewer Department as reflected in November 9, 2007 Staff Report, revised by November 14, 2007 Addendum**
- 2. Authorize Staff to correct remaining typographical errors in Limiting Conditions, if any**